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| EXAMINER | |
|---|---|
| RAMAKRISHNAIAH, MELUR | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2643 | |

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/587,990 | HAMILTON, CHRIS A. | |
| | Examiner | Art Unit | |
| | George Eng | 2643 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *5,6,9,11-14,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,6,9,11-14,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. This Office action is in response to the amendment filed 7/11/2005.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 5-6, 9, 11-14 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terui et al. (US PAT. 5,684,527 hereinafter Terui) in view of Stork et al. (US PAT. 5,771,306 hereinafter Stork).

Regarding claim 5, Terui discloses a video conferencing system comprising a conference bridge (10, figure 1) for interconnecting a plurality of videoconference stations (12-18, figure 1) and a speaker identification subsystem (146, figure 7) to determine whether a conferee is speaking based on voice level by comparing level of voices made at each point in order to determine a speaker (col. 3 lines 43-58, col. 5 lines 8-14 and col. 7 line 67 through col. 8 line 4). Thus, one skill in the art would recognize Terui teaching the subsystem to determine which of a plurality of conferees is speaking the loudest when multiple conferees are speaking simultaneously from different conference stations. Terui differs from the claimed invention in

not specifically teaching the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether the lip movements are reasonably consistent with an audio signal from the conference station. However, Stork teaches a speech recognition system utilizing dynamically varying acoustic and visual signals for improving speech recognition performance in an adverse noisy environment, wherein the speech recognition system is operable to determine the probability of each candidate utterance being spoken based on distinguishing lip and mouth movements from visual data and determining whether the lip and moth movement are reasonably consistent with an acoustic data (figure 1 and col. 3 line 61 through col.6 line 27). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Terui in having the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether the lip movements are reasonably consistent with an audio signal from the conference station, as per teaching of Stork, in order to improve speech recognition performance in an adverse noisy environment.

Regarding claim 6, Terui disclose to compare voice levels at each point (col. 3 lines 61-63). Thus, the subsystem obviously comprises a voice activity detector.

Regarding claim 9, Stork teaches to including image analysis and recognition software (4, figure 1 and col. 4 liens 38-41).

Regarding claim 11, Terui discloses a videoconference station (12, figure 1) comprising a transmitter (26, figure 1) to transmit a combined audio and video signal to a videoconference bridge (10, figure 1) and speaker identification subsystem (146, figure 7) to determine whether a conferee is speaking based on voice level by comparing level of voices made at each point in order to determine a speaker (col. 3 lines 43-58, col. 5 lines 8-14 and col. 7 line 67 through col. 8 line 4). Thus, one skill in the art would recognize Terui teaching the subsystem to determine which of a plurality of conferees is speaking the loudest when multiple conferees are speaking simultaneously from different conference stations. Terui differs from the claimed invention in not specifically teaching the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether the lip movements are reasonably consistent with an audio signal from the conference station. However, Stork teaches a speech recognition system utilizing dynamically varying acoustic and visual signals for improving speech recognition performance in an adverse noisy environment, wherein the speech recognition system is operable to determine the probability of each candidate utterance being spoken based on distinguishing lip and mouth movements from visual data and determining whether the lip and moth movement are reasonably consistent with an acoustic data (figure 1 and col. 3 line 61 through col.6 line 27). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Terui in having the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether

the lip movements are reasonably consistent with an audio signal from the conference station, as per teaching of Stork, in order to improve speech recognition performance in an adverse noisy environment.

Regarding claim 12, the limitations of the claim are rejected as the same reasons set forth in claim 6.

Regarding claim 13, the limitations of the claim are rejected as the same reasons set forth in claim 9.

Regarding claims 14, Terui discloses method of displaying images of a plurality of conferees (12-18, figure 1) in a videoconference system comprising the steps of determining whether a conferee is speaking by analyzing audio signal from a conference station in which the conferee is located by determining whether a conferee is speaking based on voice level by comparing level of voices made at each point in order to determine a speaker (col. 3 lines 43-58, col. 5 lines 8-14 and col. 7 line 67 through col. 8 line 4). Thus, one skill in the art would recognize Terui teaching the subsystem to determine which of a plurality of conferees is speaking the loudest when multiple conferees are speaking simultaneously from different conference stations. Terui differs from the claimed invention in not specifically teaching the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether the lip movements are reasonably consistent with an audio signal from the conference station. However, Stork teaches a speech recognition system utilizing dynamically varying acoustic and visual signals for improving speech recognition performance in an adverse noisy environment, wherein

the speech recognition system is operable to determine the probability of each candidate utterance being spoken based on distinguishing lip and mouth movements from visual data and determining whether the lip and moth movement are reasonably consistent with an acoustic data (figure 1 and col. 3 line 61 through col.6 line 27). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Terui in having the subsystem for determining whether a conferee is speaking based, at least in part, on distinguishing a conferees' lips and lip movements from other image features in a digital video signal from a conference station at which the conferee is located and determining whether the lip movements are reasonably consistent with an audio signal from the conference station, as per teaching of Stork, in order to improve speech recognition performance in an adverse noisy environment.

Regarding claim 29, Terui discloses the videoconferencing system further comprising means for visually altering an image of said conferee displayed in other conference station if said conferee is determined to be the loudest speaker of the plurality of conferees (col. 4 lines 22-46).

Regarding claim 30, the limitations of the claim are rejected as the same reasons set forth in claim 14.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terui et al. (US PAT. 5,684,527 hereinafter Terui) in view of Stork et al. (US PAT. 5,771,306 hereinafter Stork) as applied in claim 29 above, and further in view of Ogata et al. (JP 06062400A hereinafter Ogata).

Regarding claim 10, the combination of Terui and Stork differs from the claimed invention in not specifically teaching means for visually altering the image comprising means for highlighting a border around the image of the conferee determined to be the loudest speaker. However, Ogata teaches to display a red rectangular marker in a window display frame to indicate who is a speaker in order to easily specify who is a speaker (abstract). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Terui and Stork in having means for highlighting a border around the image of the conferee determined to be the loudest speaker, as per teaching of Ogata, in order to easily specify who is a speaker.

### *Response to Arguments*

5. Applicant's arguments with respect to claims 5-6, 9-14 and 29-30 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Eng whose telephone number is (571) 272-7495. The examiner can normally be reached on Tue-Fri 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A. Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George Eng
Primary Examiner
Art Unit 2643